

REMARKS

Claims 1-10 are pending in this application. By this Amendment, claims 1, 9 and 10 are amended for clarity. No new matter is added. A Request for Continued Examination is attached. Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Enin-Okut and Yuan during the November 16 personal interview. Applicants' separate record of the substance of the personal interview is incorporated into the following remarks.

The Office Action, on page 2, rejects claim 10 under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed.

Claim 10 is amended to obviate this rejection. Accordingly, reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. §112, second paragraph, are respectfully requested.

The Office Action, on page 3, rejects claims 1 and 9 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,128,700 to Sederquist in view of U.S. Patent Application Publication No. 2002/0031450 to Yamashita et al. (hereinafter "Yamashita") and further in view of U.S. Patent No. 5,441,821 to Merritt. The Office Action, on page 6, rejects claims 2-8 and 10 under 35 U.S.C. §103(a) as being unpatentable over Sederquist in view of Yamashita, Merritt and further in view of JP-A-2000-195534 to Aoyama. These rejections are respectfully traversed.

Sederquist is directed to a fuel cell power plant. The Office Action asserts that Sederquist teaches many of the features recited in independent claims 1 and 9. The Office Action concedes that Sederquist fails to teach the claimed cathode pump, a detecting means for supplied fuel quantity, supplied cathode gas quantity and generate power quantity, or a control device for controlling delivery of a reform-subject fuel. The Office Action asserts that

a combination of Sederquist with Yamashita and Merritt would have rendered obvious the combinations of all of the features recited in independent claims 1 and 9.

The Office Action asserts that it would have been obvious to one of ordinary skill to have modified Sederquist to incorporate a cathode pump because using a pump to remove reactants in a system is allegedly known in the art, and Sederquist teaches that its system does not have to be pressurized. The Office Action further asserts that it would have been obvious to one of ordinary skill to incorporate flow meters into Sederquist because flow meters are allegedly known in the art to accomplish the claimed task.

The Office Action relies on Yamashita to make up for the control device and method step shortfalls discussed above. Yamashita is directed to a control device for controlling a reformer that heats reformat fuel so that high-quality reformat gas can be obtained by stabilizing the temperature of a reforming portion (Abstract). The Office Action asserts that, because the control device in Yamashita maintains a desired reaction temperature, which corresponds to a target air-fuel ratio, Yamashita teaches a method that allows a system to adjust the amounts of fuel and cathode gas provided in the fuel cell system in response to changes in the load in the manner recited in claims 1 and 9. The Office Action further asserts that it would have been obvious to include an ammeter as a current sensor in the fuel system of Sederquist as modified by Yamashita, because an ammeter is a known instrument for measuring electric current.

The Office Action concedes that the combination of Sederquist with Yamashita fails to teach the determination of a residual oxygen quantity in the cathode offgas. Rather, the Office Action relies on Merritt, in its disclosure of an electrochemical fuel cell system, to make up for this shortfall.

Merritt is directed to an electric power generation system that has a regulated vacuum ejector for recirculating a fluid fuel stream (Abstract). The Office Action asserts that Merritt,

at col. 3, lines 27-29, teaches a recirculation ratio that one of ordinary skill would have used to determine the amount of reactant not consumed by the system. The analysis of the Office Action regarding the asserted combination of applied references fails for at least the following reasons.

First, the Office Action, in its rejection of claims 1 and 9, asserts that a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure. The Office Action is in error in this regard because claims 1 and 9 recite structural features and a method that incorporates the structural features recited in the claims. The recitation of these features in the claims is clear, and Applicants' representative clarified the features of the claims with Examiners Enin-Okut and Yuan during the personal interview.

Second, in the Response to Arguments section, the Office Action asserts that the June 22 Amendment does not comply with 37 C.F.R. §1.111(c) because it allegedly does not clearly point out the patentable novelty of the claims and show how the claims avoid the references or objections. As discussed during the personal interview, the June 22 Amendment, in the Remarks section, clearly asserts that the combinations of the currently-applied references cannot reasonably be considered to have rendered obvious the claimed reformed oxygen quantity calculation step that calculates the value "O" and reformed carbon quantity correction step that corrects a value "C," which are used to maintain a ratio of O/C in a target range. The previous Remarks clearly indicate what Applicants intend to be the patentably distinct feature and indicate what feature would not have been rendered obvious by the references. Examiners Enin-Okut and Yuan indicated during the personal interview that they understood Applicants' position.

Third, the Office Action, in the Response to Arguments section, also asserts that one cannot show non-obviousness by attacking references individually where the rejections are

based on combinations of references. Applicants previous agreements did not attack the references individually, but rather pointed out that the asserted combination of references could not be considered to have rendered obvious certain features of the claims. Specifically, none of the references can be considered to teach the claimed carbon quantity correction step. Examiners Enin-Okut and Yuan indicated during the personal interview that they understood Applicants' position in this regard.

Fourth, the Office Action fails to assert any reference that can be considered to teach, or to have rendered obvious, the claimed reformed carbon quantity correction step that corrects the reformed carbon quantity C by changing the delivery of the fuel pump so that O/C, which is a proportion of the reformed quantity O against the reformed carbon quantity C, may be kept in a target range. As discussed during the personal interview, it appears that the Office Action asserts that Merritt, at col. 3, lines 27-32, teaches features that can be considered to correspond to the claimed reformed oxygen quantity calculation step. There is, however, nothing in Merritt, Yamashita or Sederquist that can be considered to correspond to the claimed reformed carbon quantity correction step that keeps the ratio O/C within a target range by changing only the delivery of the fuel pump. Yamashita, for example at paragraph [0084] teaches that steps S16 and S17 adjust the amounts of both combustion methanol and air that are fed to a combination portion 6. Neither Merritt nor Sederquist teach adjusting only delivery of the fuel pump to correct a carbon quantity.

Applicants' representative presented this argument to Examiners Enin-Okut and Yuan during the personal interview. Examiner Enin-Okut indicated that it was her position that the claims did not limit the maintenance of the ratio O/C to changing only the delivery of the fuel pump. Examiner Enin-Okut suggested that amending independent claims 1 and 9 to clarify that the reformed carbon quantity is corrected by changing only the delivery of the fuel pump so that O/C, which is a proportion of the reformed oxygen quantity O against the reformed

carbon quantity C, may be kept in a target range, may be helpful in overcoming the current rejections.

In view of the personal interview, Applicants amend independent claims 1 and 9 in the manner suggested by the Examiners.

For at least the foregoing reasons, no combination of the currently-applied references would have rendered obvious the combinations of all the features recited in independent claims 1 and 9. Further, dependent claims 2-8 and 10 would also not have been rendered obvious for at least the dependence of these claims on independent claims 1 and 9, as well as for the separately patentable subject matter that each of these claims recites.

Accordingly, reconsideration and withdrawal of the rejections of claims 1-10 under 35 U.S.C. §103(a) over the various combinations of currently-applied references are respectfully requested.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Michael J. Steger
Registration No. 66,034

JAO:MJS/ysg

Attachment:
Request for Continued Examination

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OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

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